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THE FARM INDEX

U. S. Department of Agriculture/November 1971

New Moves in the Marketing Game Page 8



As in the 1970/71 marketing year, the current one promises another razor-edge balance in supply and demand for soybeans. The carryover on September 1 and the start of the new season was 98 million bushels. Stocks next September will again be at low operating levels.

The 1971 soybean crop is estimated at a record 1.2 billion bushels, up from 1.1 billion a year earlier. All of the new crop beans are likely to be used in 1971/72, notwithstanding a probable slackening in domestic crushings and exports.

Crushings are projected slightly below last season's 760 million bushels. Processors face excess capacity this year, and processing margins may be less favorable than in the past 2 marketing seasons.

Owing to reduced supplies for export plus higher U.S. prices, exports this marketing year are expected to trail the record 433 million bushels shipped in 1970/71. The export outlook for the U.S. is further clouded by the prospect of larger world supplies of competing oilseeds, fats, oils, and protein meals.

Prices to farmers may average around \$3 per bushel in the current season—compared with \$2.85 received in 1970/71—sharply above the loan rate of \$2.25. A price of \$3 would be the highest annual average in 21 years.

Will soybean growers, encouraged by these prices, plant more acreage to beans next spring than in '71? The answer hinges in part on what happens to prices for feed grains, especially corn. As of mid-October, the soybean/corn price ratio was running three-to-one in soybeans' favor.

Moreover, in 1972 individual producers will be permitted to plant any combination (or all) of their acreage—after allowing for set-aside—to wheat, feed grains, or soybeans without losing their planting history for the respective crops or program benefits.

"However, an increase in soybean plantings may be difficult to achieve because the total acreage available for planting to crops will be reduced through increased land set-aside," said

ERS in its September issue of the Fats and Oils Situation. Total set-aside in '72 may be raised substantially from the 34 million acres removed in '71. Some of the bigger set-aside will reflect barley's inclusion in the 1972 feed grain program. Other crops will have larger set-aside as well.

Look for a strengthening in hog prices in the winter and spring of '72 as slaughter supplies dwindle. Prices in the first half of the year are expected to be well above the year earlier average of \$17.50 per cwt. but less than the \$25.50 of January-June 1970.

On September 1, Corn Belt farms had 8 percent fewer hogs in weight groups that typically supply the bulk of winter marketings. The Belt's September-November farrowings—for pig marketings in the spring—were down an indicated 11 percent. However, producers in other areas may not be cutting back as much, and the number of pigs saved per litter is likely to be up this fall. Also, part of the drop in hog marketings will be offset by heavier market weights.

Cigarette use per person appears to be holding its own after 4 years of decline. This year's use per person (18 years and up) is estimated about the same as in 1970, when it reached 3,985 (199 packs). Despite steeper retail prices, more people are of smoking age and consumer spending continues at high levels. The outlook for '72 is for per person use to stay unchanged.

Cigar consumption this year will hover near the 1970 figure of 8.1 billion, and should hold at that level in 1972. Use of cigars and cigarillos in '71 will average around 123 (per male 18

years and up), off 2 percent from 1970.

This year's output of tobacco for pipes and roll-your-own cigarettes will be about the same as the 67 million pounds of 1970, with little change in view for '72.

The 1971 rice crop, by the September 1 estimate, was up only 1 percent from a year earlier to 83.8 million cwt. (rough basis). The August 1 carryover, however, increased to 18.6 million cwt. This brings the total supply for 1971/72—including estimated imports of 1 million cwt.—to 103.4 million cwt., and the third largest on record.

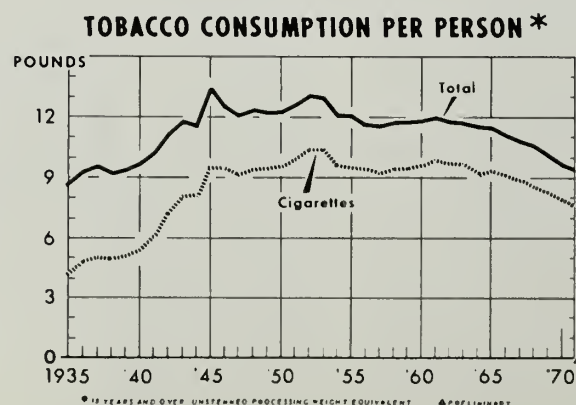
Stocks at the end of the current marketing year might be a shade smaller than in August 1971 if—as expected—domestic rice consumption continues to trend up and the export picture improves. ERS projects food use at 25.7 million cwt., up from 24.8 million in 1970/71.

Farm prices are seen averaging somewhat above the \$5.09/cwt. of last season. But the spread between farm prices and the loan rate (\$5.07 for the 1971 crop) may narrow because of large rice supplies here and abroad.

Heavier broilers, and more of them, point to a pickup in broiler meat output by year's end. Chick replacements—in 22 important States—for marketing in October-November rose 5 percent from the same period of 1970. Egg settings in late August and early September were also up about 5 percent. Based on marketing weights in the first half of the year, and expected weights the rest of the year, average weight in 1971 may be up slightly from last year's 3.6 pounds.

Broiler prices will probably decline seasonally during the rest of '71, though fourth quarter quotations at wholesale might average moderately higher than the 25-cents per pound received at nine major cities in October-December '70.

The 1971 turkey crop is placed at nearly 118 million birds—about 2 million more than a year earlier but 8 million under the record crop of 1967. Most of the increase will be in heavy



breeds. They'll number some 105.5 million compared with 103.5 million in 1970.

Egg production by the close of '71 may be only slightly above last year's 195 million cases. Higher rate of lay will be partly cancelled out by a smaller laying flock. The flock on September 1 was estimated at 317 million birds—down about 2 million from a year earlier.

The 1972 National Agricultural Outlook Conference has been set for February 22 through 25.

Place: Jefferson Auditorium, U.S. Department of Agriculture, Washington, D.C.

Central theme: "U.S. Farmers and World Trade," including sessions on the European Community's plans for expansion, changes in monetary relationships, trade with Communist China, agricultural production in the developing countries and implications for the U.S.

Also on the agenda: The look-ahead for U.S. agriculture, and trends in the general economy.

Sponsors: USDA's Economic Research Service and the Extension Service.

Foreign spotlight: States' shares of U.S. farm exports. Illinois was again the front-runner in fiscal 1971. Its exports of agricultural products came to \$655 million out of the all-State tally of \$7.8 billion. Illinois led in exports of soybeans, soybean meal and oil, and feed grains, and was also an important exporter of wheat and livestock products.

Iowa, with farm exports of \$592 million, replaced California in the No. 2 spot. Third-place California had exports of \$555 million, followed closely by Texas (\$554 million).

Of the \$1.1-billion increase in our agricultural exports last year, two-fifths was contributed by Texas, Iowa, Minnesota, Kansas, and Mississippi. Texas, with a gain of \$132 million (31 percent), recorded the largest increase.

All States combined, U.S. farm exports in 1970/71 were equivalent to 16 percent of total cash receipts from farm marketings in 1970.

FARM

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hawaii inc.



Big farming corporations are right at home in Hawaii.

Corporations operate more than a third of Hawaiian farmland—and take in around four-fifths of the State's farm receipts.

Corporations produce about 95 percent of the two major crops—sugarcane and pineapple—and about 50 percent of the third leading agricultural product, beef cattle.

Hawaii's agriculture-based corporations have branched out extensively into other activities, such as land development, shipping, and tourism. One of the largest corporations in agriculture, for instance, now receives less than 20 percent of its income from agriculture.

On the average, corporations account for about 1 percent of the Nation's total farms, about 7 percent of its farmland, and 8 percent of sales from farms.

But in Hawaii, 60 corporations control 3 percent of the farms and 36 percent of the farmland. This compares with California where corporations operate about 4 percent of the State's farms and 19 percent of its farmland; and with Florida where corporations operate about 9 percent of the farms and 31 percent of the land in farms. Florida and California account for a third of all the farming corporations in the U.S.

The stage was set in the last century for Hawaiian agriculture to develop differently from that of mainland United States.

In the United States, farmland was neither scarce nor difficult to obtain. And, in such national policies as the Homestead Act of 1862, the country encouraged broad distribution of land among people.

But in the Hawaiian Islands, which became a U.S. Territory in 1900, ownership was never widely dispersed. Early in the 1800's, the land all "belonged" to the king, and the people farmed it under the supervision of chiefs. When the king divided the land in the 1840's and 1850's, he retained nearly 1 million acres, gave 1.5 million acres to the Hawaiian government, 1.6 million

acres to the chiefs, and 28,600 acres of the most valuable land to the people.

The natives, however, were slow to grasp the significance of the land titles, and much of the total acreage soon passed into the hands of outsiders through sales, leases, or marriages.

Efforts to establish family farms were made in Hawaii, but in comparison to the mainland, these were limited in scope and results.

Just prior to the land division, the first permanent sugar plantation—forerunner of the present system of corporate agriculture—began in 1835.

Until then, few foreigners were in agriculture. They were lured to it by the expanding export market on the West Coast of the U.S., as well as by changes in the landholding system.

The foreigners tried a number of crops on Hawaii's mineral-rich volcanic soil, but sugarcane was to emerge as *the* industry. It struggled through market uncertainty, low prices, labor scarcity, and drought, but by the late 1850's the pattern of large plantations was clear.

Sugarcane is essentially a plantation crop, conducive to advantages of scale and corporate management, and by the late 1850's, the surviving plantations were primarily those combining the growing and processing of sugarcane into one enterprise. They proved more successful than a system of central mills to which sugarcane is brought by individual small farmers.

During the Civil War, high prices paid for sugar by the U.S. caused the industry to flourish, and by the turn of the century, sugar was firmly set as Hawaii's major industry.

Most of today's "Big Five" major corporations in Hawaii trace their history back to agriculture, and most to the early days of the sugarcane industry.

Through the years, sugarcane has remained the biggest crop for the Islands, accounting for about half of all farm receipts in 1970.

However, the major companies are

Bountiful Breezes

The trade winds that prevail in the Hawaiian Islands have to do a lot of mountain climbing, and they lighten their load as they go up.

So on the windward side of the islands, rainfall may exceed 400 inches a year, as it does on Kauai, and in some leeward areas, dip to 10 inches, as it does on the Big Island, Hawaii.

However, the absorbent volcanic mountains are themselves a reservoir for rain water and are tapped for irrigation purposes. Flumes and canals guide the water down to crops, especially sugarcane, the Islands' greatest user of water. Sugarcane requires about a ton of water to produce a pound of sugar.

diversifying and seeking new crops. Of the six companies that control 90 percent of the sugarcane acreage, five had other enterprises in 1967, according to an ERS study. These companies owned cattle ranches; pineapple and macadamia nut plantations; truck and ocean shipping lines; farm supply outlets; fertilizer, chemical, and farm machinery plants; land development offices.

In the pineapple industry, also conducive to plantation management, three corporations produced about 95 percent of the pineapples in 1967. The companies were also processors

and canners and marketed nationally known brands.

Workers in these two industries—sugarcane and pineapple—are highly unionized and among the highest paid farm workers in the world. Cash wages and fringe benefits for sugar workers averaged about \$30 per day in 1969, nearly double the rate in California.

Only a few corporations produce flowers, vegetables, milk, pork, poultry, and eggs. These are much smaller in size than the sugarcane and pineapple plantations or the cattle ranches, and are usually owned and controlled by families.

The State's major farming corporations tend to be much larger than those on the mainland, and far less likely to be controlled by an individual or a family.

Thirty-eight of Hawaii's corporate operating units each sold more than \$500,000 worth of farm products in 1967, and only 11 had sales of less than \$40,000.

On the mainland U.S., only about 1 in 10 farming corporations had farm product sales of \$500,000 or more in 1967. Nearly 1 in 5, though, had sales of less than \$20,000.

Individuals or families control only about 20 percent of Hawaii's farming corporations, whereas on the mainland, individuals or families control about 80 percent of the farming corporations. (1)

CORPORATIONS IN HAWAII'S AGRICULTURE

	No. of corporations	Crop acreage ————1,000 acres————	Total acres ————	Percent of total receipts
Sugarcane	10	217	242	94
Pineapples	3	55	55 }	95
Other fruits and nuts	5	4	4 }	
Flowers and vegetables	7	1	1	10
Beef cattle	21	—	500	50
Dairy	6	—	2	60
Poultry ¹	5	—	—	25
Hogs, cattle feeding ¹	3	—	—	10
Total	60	277	805	82

¹ Less than 500 acres.

Limited Partnerships May Expand Feedlot Holdings

We've seen a huge expansion in the number of large-size feedlots since the mid-1960's. Those with capacities of upwards of 16,000 head more than tripled in number. In 1970 there were 146 such feedlot "plants" or "sites," according to the official count.

Just how many firms owned those feedlots has not been reported, but the evidence suggests the number was much lower than 146. Some firms are "multiple-lot" firms. They have plants scattered in several States. A single firm might have a combined plant capacity of 200,000 head or more.

There's been a recent development in the feeding business that may portend even more concentration of marketings. The development comes under the heading of a financial device for raising equity capital. Wall Street calls it the limited partnership interest.

Limited partnerships have been used for years to finance oil and gas exploration, but to the cattle feeding industry, they represent a new way for attracting equity capital.

Here's the way a limited partnership gets off the ground—

First, a feeding firm creates a subsidiary corporation and designates it as the general partner. The general partner has some degree of financial backing, at least for borrowing purposes, from its parent company.

The general partner then offers to investors limited partnership interests at a specified price per unit of security. The general partner has complete control over use of funds raised to carry out a cattle feeding program. These partnership interests are "limited" in the sense of carrying limited liability and also regarding management decisions.

Earnings and losses are passed to the limited partners. From an income tax standpoint, the arrangement offers the limited partners an opportunity for tax deferral to lower-tax bracket years, made possible

in part by prepaying feed expenses.

Offerings of limited partnership interests are securities that must be registered and cleared with the Securities and Exchange Commission. Since April 1970, at least seven firms have applied for offerings with SEC. Another two firms filed to offer agency services for investors.

As yet, not all of the nine firms have received SEC clearance. And it's possible the firms will not be able to sell all their securities, if and when they get the go-ahead. That will depend on the reception this new type of security gets from investors.

Conceivably, the nine offerings together could raise about \$88 million of equity capital from about 14,000 investors. This equity could support an additional \$265 million of credit, for a total fund of \$353 million. However, this level of funding is not likely to be realized.

At an average cost of \$275 per head (cost of feeder cattle plus feed and milling) these nine firms could finance the purchase of nearly 1.3 million head of cattle, or a yearly volume of possibly 2 million head. That would account for as much as 8 percent of the total nationwide marketings of fed cattle in 1970.

The multiple-lot firm, ERS reports, is an example of horizontal integration. It has largely escaped notice because of the high interest in vertical integration, the most common form being the combination of a feed manufacturing enterprise with a commercial feedlot operation. (2)

Denim, Corduroy Weave Gains for Cotton Use

During 1970/71, mill use of all kinds of cotton gained—though modestly—for the first time since 1965. At season's end on July 31, U.S. mills had consumed 8.1 million bales of cotton—up from around 8 million the previous season.

Cotton milling accelerated despite the continuing cutbacks in military demand. Shipments to U.S. military forces last season shrank the equivalent of about 75,000 raw bales. A

strong demand for other end uses—particularly denim and corduroy—kept the mills humming and more than offset the drop for the military.

Denim production during 1970/71 jumped about a half. Corduroy output rose one-third. Together, the two fabrics absorbed an estimated additional 175,000 bales of raw cotton.

Reduced cotton textile imports and moderating competition from foreign and domestically produced man-made fibers also contributed to the growth in cotton milling. (3)

Dairymen's Day Clocked At 11 Minutes Per Cow

Dairymen score near the top in the efficiency ratings for American farmers.

Milk output per man-hour has doubled since 1960. Over the past decade, only cotton and poultry had greater gains in efficiency than those for dairying.

Dairy farmers in 1970 spent an average of 11 minutes a day to care for each milk cow (excluding the time spent in raising feed and caring for herd replacements). Ten years ago, these farmers used over 20 minutes per cow in direct labor.

Here's how economists explain the rapid growth in productivity in the dairy business—

- Capital investment on representative dairy farms has increased about 50 percent since the mid-1960's. Much of this rise was due to increasing land values. But inputs of capital as a substitute for labor have risen substantially. In southeastern Wisconsin, investment on a representative 40-cow dairy farm reached some \$123,000 last year, and in central New York, \$84,000.

- Output per cow swelled by a third since 1960, due to improved breeding, feeding, and management. Participation in herd testing programs spurred production advances. Around 27 percent of the total U.S. dairy herd was enrolled in the National Dairy Herd Improvement Program (DHIA) and other testing programs at the start of 1971, compared

with 15 percent a decade earlier. Cows in the DHIA programs averaged 12,750 pounds of milk in 1970—36 percent above the national average of 9,388 pounds.

- Stepped-up use of artificial insemination—which increases the availability of higher quality sires—has made a further contribution to output per cow, and consequently, to higher labor productivity. Over half the dairy cows were bred artificially in 1969, vs. about 30 percent in 1960.

- Less productive operations have gone out of business. Farms selling milk or cream now number fewer than 400,000, down from about a million in 1960. (4)

California's No. 1 in Cash Receipts—As Usual

For the 22nd year in a row, California in 1970 came out No. 1 and Iowa No. 2 in the nationwide breakdown of farm cash receipts.

California's sales of farm commodities tallied nearly \$4.5 billion, or about 9 percent of the 50-State total of \$49.2 billion.

Iowa had \$3.9 billion (8 percent of nationwide receipts). These figures do not include direct government payments to farmers.

Others in the top 10 States, in billions: Texas \$3.1; Illinois \$2.7; Nebraska \$2.0; Minnesota \$2.0; Kansas \$1.8; and Wisconsin, Missouri, and Indiana, all at \$1.6.

The 1970 leader in livestock and livestock product receipts—totaling \$29.6 billion for the 50 States—was Iowa, followed by Texas and California. The big three in crop receipts—totaling \$19.6 billion for the U.S.—were California, Illinois, and Texas, in that order.

Realized net income per farm was highest in Arizona (\$26,803). Hawaii was next (\$18,604), and California, third (\$16,321). The average in these three States is influenced by the relative importance of very large farms with sales above \$40,000.

For all States, net income per farm averaged \$5,374, compared with the record \$5,654 in 1969. (5)



Men and Milestones

BOSTON, November 1931—Dr. Frederick V. Coville, senior botanist with the U.S. Department of Agriculture, receives the Massachusetts Horticultural Society's White Medal of Honor, America's highest horticultural award.

The Horticultural Society cited Dr. Coville for his innovative work with blueberries. But he did more than turn an unimposing wild fruit into a highly productive cash crop that could be grown on former wastelands.

During his experiments with blueberries, Coville discovered the vital importance of cold weather in the growth cycles of several ornamental and food plants. He also identified soil acidity as a major factor in determining the geographic distribution of plants. Both discoveries were considered major botanical breakthroughs.

Born in Preston, New York in 1867, Dr. Coville earned his bachelor's degree from Cornell University in 1887 and joined the Department in 1888.

He received widespread acclaim 5 years later when he published *Botany of the Death Valley Expe-*

dition, one of the earliest critical studies of desert vegetation. Many of Coville's colleagues judged this to be his most important work.

As Chairman of the National Geographic's Research Committee, he was instrumental in determining the Society's exploration policy. As adviser to the Carnegie Institution, he was largely responsible for founding its Desert Botanical Laboratory in Arizona. Coville was an architect of the federal grazing policy and a prime mover in the establishment of the National Arboretum in Washington, D.C.

His honors were almost as extensive as his interests. He received the honorary degree of Doctor of Science from George Washington University in 1921. But the most fitting tributes to Coville were the dozen or so plants and the Alaskan lake which were named after him.

Dr. Coville died on January 9, 1937. At the time of his death, he was writing a sequel to the classic Death Valley study which had first brought him to prominence 44 years earlier. (6)

NEW MOVES IN THE MARKETING GAME



Change is the name of the game, and many of the new moves in marketing are shaping agriculture's future. How farmers can cope with the changes is a question that remains to be answered.

Most farmers have little clout when negotiating the prices of products they sell. The same applies when they buy nonfarm items needed for farming. Hence an important factor in the economic standing of farmers is the performance of industries serving them.

Since 1960, the prices paid by farmers increased about 36 percent. Currently, production expenses are running about \$41 billion a year. They account for nearly three-fourths of farmers' gross farm income, which in 1970 was \$57 billion.

To realize this income, farmers relied on marketing firms. Last year these firms received about two times the compensation that farmers got.

Food marketing, one of the Nation's biggest industries, employs the equivalent of over 5.3 million full-time workers. Some 600,000 establishments are involved in getting farm foods from the farm gate to the grocery counter. The combined costs of food marketing operations came to \$68.5 billion last year, 55 percent more than in 1960. About two-thirds of the increase in the marketing bill was due to larger volume of products marketed, and the rest to steeper prices for labor and materials plus more marketing services provided the customers.

Certain new moves in the marketing game have important implications for the future organization and economic status of agriculture. It remains to be seen how farmers will cope with these changes.

✓ In nearly every line of business, firms within the marketing industry are becoming fewer in number and larger in size, partly because of technological developments and their contributions to economies of scale.

✓ Output of most industries has become increasingly concentrated

among the largest firms.

✓ Retailing, wholesaling, and food manufacturing have become more integrated—through expansion, mergers, and acquisitions.

✓ Multi-industry marketing firms are becoming more and more common. For example, not so many years ago you could tick off the names of several companies that were household words for apple products. Today, those same firms have their fingers in so many pies it's hard to characterize their wide ranging operations. Recently, some firms have even engaged heavily in farming.

These and other firms may have diversified into other enterprises because of (1) a desire to cut costs by spreading merchandising efforts over a wider line of goods; (2) a desire to minimize the risk-taking; or (3) the need to put their expansion efforts into other lines because of anti-trust legislation.

Sweeping changes in the organization of plants and facilities have accompanied these developments.

The total number of food manufacturing plants has dropped from 42,000 in the early 1950's to fewer than 27,000. In the flour milling industry alone, the number was halved during the 1950's and 1960's, so that now fewer than 540 mills are still in

business. In 1965, the 31 largest firms had more than 40 percent of the total milling capacity in the U.S.

Plants processing poultry have also declined in number and become larger in size. In the short span of 1964-70, the number of federally inspected plants fell approximately 15 percent. However, the number of large plants—those processing 30 million or more pounds of poultry a year—about doubled. Last year they accounted for nearly four-fifths of total output of all federally inspected plants.

Merchant wholesalers have doubled sales per establishment since the early 1950's. The number of establishments decreased only slightly, partly because many have been needed to supply the requirements of the booming institutional food market. However, wholesale functions are more and more being integrated with retailing. Four out of five firms in the supermarket industry have their own central warehouses or else are affiliated with a retailer-owned cooperative or a wholesaler-sponsored voluntary chain.

These firms dominate retail sales. To illustrate, these days over three-fourths of all grocery store sales are rung up in supermarkets (defined as having annual sales of \$500,000 and

Strange Bedfellows

Nonfood products occupy a lot of shelf space in our Nation's supermarkets.

Last year a typical supermarket stocked 8,500 different items, of which over 3,200 (nearly 38 percent) were nonfoods.

Almost 1,000 were health and beauty aids—hair spray, shampoo, etc. Over 800 were household supplies, toothpaste, first-aid supplies, including detergents, cleansers, and disinfectants. More than 400 were housewares. Pet products numbered over 200, as did paper products and film and foil wrappings.

On the food side, the inventory showed nearly 1,000 different kinds and sizes of canned fruit products, canned vegetables, juices, meats, specialty foods, and fish; 250 baby food items; and 500 frozen foods.

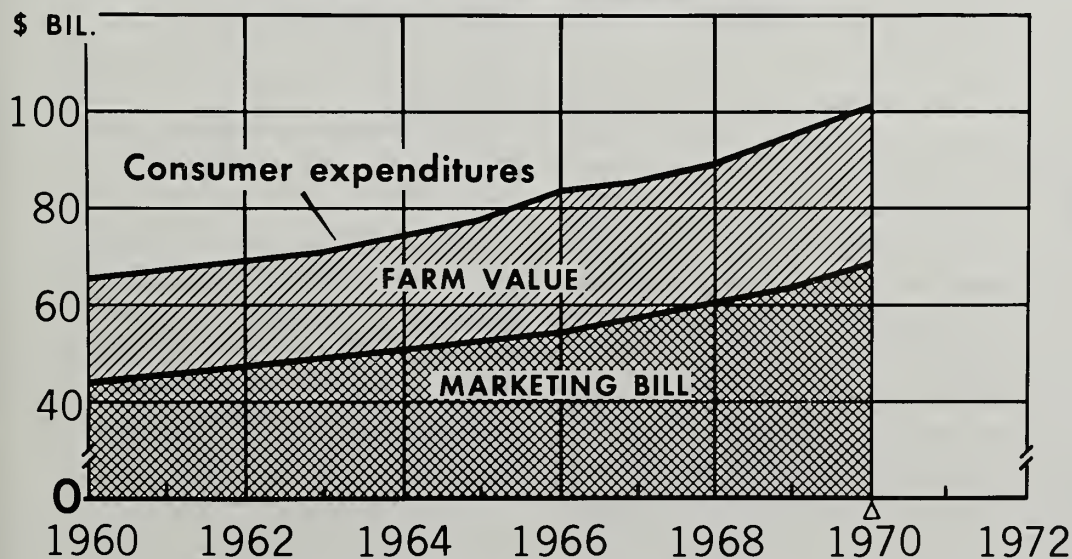
There were nearly 400 items in the dairy department, including 150 kinds of cheese, 60 ice cream items, and 25 fluid milk products. Other items: breakfast foods, 200; pickles and olives, 200; sauces and dressings, 250; spices and extracts, 200; spreads and sirups, 200; coffee and tea, 100; and fresh meat and fish, 300. (8)

up). Numerically, they increased from over 33,000 in 1960, to over 38,000 last year. The number of "small" grocery stores—those with sales of less than \$100,000—fell sharply. In 1970 only 113,000 remained out of a total of 168,000 10 years earlier.

The surviving firms that buy, process, and market agricultural products are—more so than in the past—making specific demands on suppliers for quality, delivery conditions, and prices. In their operations, they are emphasizing private brands, product differentiation, and new product development. New products introduced over the past 10 years now account for more than half of sales receipts in grocery stores, not counting meats and produce.

In the realm of supply procurement, big supermarket chains often deal directly with producers to get much of their fruits, vegetables, and

FARM-FOOD MARKETING BILL AND CONSUMER FOOD EXPENDITURES



FOR ALL DOMESTIC FARM FOODS PURCHASED BY U.S. CIVILIANS FOR CONSUMPTION, BOTH AT HOME AND AWAY FROM HOME
▲ PRELIMINARY

other nonprocessed food product supplies.

Looking ahead to tomorrow's marketing game, the new moves emerging in the commodity markets include a wide range of possibilities . . . contract growing . . . futures trading . . . and greater use of computers to search out markets and analyze them.

As for agriculture, producers of some commodities see room for improvement in marketing's performance. These men are getting better organized for marketing. A clear-cut example: Six large regional cooperatives have been formed since 1967 by merger of many existing local cooperatives.

They have 73,000 producer members with 22 percent of the national milk supply. Also, there are eight large federations of cooperatives with 126,000 members controlling 44 percent of the milk supply.

This kind of counter strategy is gaining momentum for other products as well. The move could even result in relocation of important control centers for the food industry from the processing-marketing sector to the producers themselves. (7)

Cranberries Burst Into Holiday Season

Despite a forecasted drop in nationwide cranberry production, there'll be plenty of berries to go with this year's Thanksgiving turkey.

Preliminary figures place our '71 cranberry harvest at around 1.9 million barrels (100 lbs. each)—second biggest in history. It's 4 percent smaller than last year's record output—by roughly 91,000 barrels—but 7 percent above 1969's 1.8 million barrels, of itself a new record.

Judging by the 1970/71 pack of canned cranberries, there'll be no dearth of processed items either. The pack, a whopping 3.9 million cases (48 lbs. each), was the largest in 10 years.

Massachusetts, with 960,000 barrels, continues to reign as the top producer of cranberries. Its output is

projected slightly above last year's and 27 percent over 1969's.

Hot days, followed by near freezing weather, dampened prospects for Wisconsin's growers. They expect a crop of 599,000 barrels—down 15 percent from a year earlier.

Washington's production is also expected to drop about 15 percent from 1970—to 135,000 barrels. Cold spring weather delayed blooms in most bogs by 3 weeks.

New Jersey's 186,000 barrels would raise the Garden State's production 4 percent above last year's and 19 percent above 1969's.

Oregon's harvest will approximate 67,000 barrels this year, up 11 percent.

No Johnny-come-lately's in the cranberry business, these leading producing States have been growing cranberries on a commercial scale for more than 100 years.

Even earlier, the settlers at Massachusetts' Plymouth Colony, founded in 1620, wrote that cranberries were growing wild, and that local Indians used them to make pemmican—a high-energy food prepared from dried meats and fruits. (Pemmican, incidentally, is used even today as emergency rations for sportsmen and explorers in the arctic regions.) Indian women had yet another use for cranberries: as a poultice to draw poisons from wounds.

Henry Hall of Cape Cod was reportedly the first to commercialize cranberry raising, circa 1816. By 1854, cranberries had attained the status of an industry in Massachusetts, which that year began keeping statistics on the annual crop output and its value. The cranberry industry quickly spread to New Jersey, Wisconsin, and Oregon—all of which were commercially growing the fruit by the late 1800's.

Production practices, of course, have changed considerably since the time of Henry Hall. With the recent introduction of mechanical cranberry pickers in U.S. bogs, it's possible for one operator to harvest 3,500–6,000 pounds a day. Using the old hand scoop pickers, farmers used to get

only about 660 pounds a day.

Harvested acreage has been dropping since 1961, but higher yields have more than offset the decline in area. Yields per harvested acre doubled during the past 20 years, while acreage fell by roughly a fifth since 1950. (12)

Sales of Eating Places Outpace Food Stores'

Over the past 10 years, gross sales at eating places—including nonfood items—zoomed upward by \$12 billion, or about 5 percent a year.

Much of this growth reflects the rapid expansion of franchised fast-food outlets selling hamburgers, fried chicken, pizzas, roast beef sandwiches, and so on.

During the last decade growth rates were most dramatic from 1963–69 and sales in eating places outpaced food store sales in that period. Business done by eating places grew twice as fast as the growth rate of our population; sales by food stores grew only about 50 percent faster.

Between 1969 and 1970, most of the sales gain for eating places was apparently due to rising prices, as opposed to a higher volume of business done per capita. Rates of gain were about equal to that of food stores.

Changes in legal form of ownership of firms doing business in the away from home food market became more apparent in the late sixties. Incorporated establishments began to exert a bigger impact on total sales of eating places because of the growth in the fast-food franchises.

Many eating establishments require a capital investment of \$100,000 or more. This large investment favors corporations because of their ability to raise capital while providing limited liability to investors.

Proprietorships continue to lead in terms of market share, but corporations replaced partnerships as the second most important form of organization of firms. (10)

U.S. Vegetable Growers Brace for Mexican Imports

For those U.S. growers who compete with Mexican produce in the American market for fresh winter vegetables—the news is not good. It is that competition will harden in years to come, with the prospect of further increases in U.S. imports from Mexico.

Last year's imports of fresh and processed vegetables and fruits from Mexico broke all records. The import value, at \$191 million, was nearly twice the 1967 level and over four times the value of shipments in 1960. Fresh vegetables accounted for about \$140 million, and of these, tomatoes had the biggest share with \$95 million.

Of the commodities studied, imports from Mexico of most fruits and vegetables trended up during 1967–70. The exception was cantaloupes. Imports of cucumbers, peppers, and eggplants were sharply higher. Tomatoes increased at a fairly even gait. Imports from countries other than Mexico rose slightly, but volume was relatively small.

Mexican producers have steadily carved a bigger slice of the U.S. market in recent years. Their share of December–May tomato movements went from about 30 percent in the 1963/64 season to 46 percent in 1968/69, and to 60 percent in the 1969/70 season.

Florida's share of winter tomato movements declined from 62 percent in 1963/64 to 47 percent in 1968/69, and to 33 percent for the 1969/70 crop when adverse weather reduced yields. In the Chicago market, Florida supplied 61 percent of the shipments from the two areas in 1967, and Mexico, 39 percent. By 1970 these shares were practically reversed.

Pressures from tomato imports are seen building in the future for the same reasons they have in the past. Namely, that Mexico's costs of production and marketing are lower than in the U.S.; and Mexico's climate is more conducive to vegetable

growing. (Note: These assessments were made prior to the imposition of a 10-percent surcharge on most items imported by the U.S.)

For vine-ripe tomatoes in the 1970/71 season, Florida's cost of producing and marketing f.o.b. totaled \$2.39 per 20-lb. equivalent, versus Mexico's \$2.02 f.o.b. Nogales, Arizona. Mexico's advantage—37 cents—compares with 18 cents in 1967/68, and partially explains an eastward shift in market penetration of Mexican tomatoes and a stronger competitive position in western markets.

According to ERS, this widening cost spread—combined with the climatic advantage enjoyed by Mexican producers—indicates that Mexico may continue to supply larger amounts of vine-ripe tomatoes to the U.S. And, Florida's relative position may continue to weaken.

In production and marketing of winter cucumbers, Florida has a competitive edge when it comes to costs. But cold weather limits large-volume production during the severe winter months. ERS concludes, therefore, that annual cucumber imports from Mexico and the Caribbean may go up.

In green peppers, Florida has remained in a strong position since 1967/68. However, imports are ex-

pected to increase as adverse weather periodically reduces Florida's production.

In eggplants, Florida and Mexico have about the same production costs. Costs are rising faster in Florida, however. So, Mexico will probably gain an increasingly bigger share of the U.S. market.

Cantaloupe shipments from Mexico may grow in line with U.S. winter demand. Domestic spring output will also rise gradually, and continue to shut out Mexican cantaloupes during the months of large supplies from our Southwest.

About strawberries, ERS figures Mexico will probably expand its portion for the early fresh market.

Mexico has a favorable balance of trade with the U.S. in agricultural commodities, but the U.S. continues to enjoy a favorable balance in all commodities. Vegetables have made major contributions to the doubling of exports of agricultural products to the U.S. by Mexico since 1963. The U.S. also nearly doubled its exports of agricultural products to Mexico since 1963, but these were still only about one-third the value of imported Mexican goods.

Both countries more than doubled their total trade with each other but the U.S. maintained a net advantage of \$449 million in 1970. (9)

MEXICO SLICES INTO U.S. TOMATO MARKET *

Area and Season	1960	1962	1964	1966	1968	1970
<i>1,000 cwt. of fresh tomatoes</i>						
Florida						
Winter	1,552	3,280	3,360	2,934	2,340	1,368
Early spring	2,195	2,294	2,520	3,125	2,840	2,178
California						
Early spring	710	525	400	232	320	434
Texas						
Early spring	580	1,026	307	108	80	195
Total U.S. winter and early spring	5,037	7,125	6,587	6,399	5,580	4,175
Mexican imports	2,518	2,332	2,461	3,587	3,874	6,410
Other imports	609	30	31	19	29	57

* U.S. data exclude production not marketed.

A look-ahead to the year 2000 shows that more nonfarm employment in rural areas is probably the greatest need for closing the development gap between rural and urban America.

This conclusion comes out of a study of "alternative futures" for rural development that might unfold depending on what happens to population growth, rural outmigration, worker productivity, and nonfarm job opportunities in the coming years.

For one phase of this study, a rural area was defined as a multi-county region where population density was less than 100 persons per square mile. Under this criterion, 37 percent of the population lived in rural areas in 1970.

The ERS analysis began by establishing likely events over the coming decades if 1960-70 trends in population, income, and employment were allowed to continue to the year 2000. These projections of 1960-70 trends indicate that the pace of rural outmigration will continue to fall off, mainly because incomes of rural workers are projected to continue rising faster than incomes of urban wage earners.

However, according to trend projections, the economic gap between rural and urban American will not close on its own accord by the year 2000.

After developing a set of future conditions based on 1960-70 trends, ERS analysts were ready to test the impacts on the rural and urban sectors of alternative developments in population growth, rural outmigration, worker productivity, and nonfarm job opportunities.

Though in reality, economies are affected by a mix of the above factors, ERS researchers examined them individually to determine which would have the greatest impact toward achieving an economic balance between rural and urban America.

Each of the alternative developments was simulated to the year 2000 for comparison with 1960-70 trends. The 1960-70 trends were more important for comparing deviations due to alternative simulated developments than as an end in themselves.

Controlled population growth. To test this alternative, a simulation was run in which the natural population growth rate in rural areas was reduced to 1 percent a year.

Unemployment fell, and rural per capita incomes in the year 2000 edged up \$307 over current trend projections. The gains, however, were at the expense of a reduction in total business activity.

Conversely, a population growth rate set slightly above the projected trend generated greater business activity, but produced higher unemployment and lower per capita incomes.

SHALL THE TWO



Limited rural outmigration. This alternative would ease population pressures in urban-oriented multi-county areas, while providing rural America with a larger work force.

A simulation with net outmigration set at zero resulted in about 8.5 million more people living in rural areas in 2000 than would be expected by projected trends. However, fewer than a tenth of these people would find employment unless the rural labor market were simultaneously expanded. Without other programs, per capita incomes would fall with

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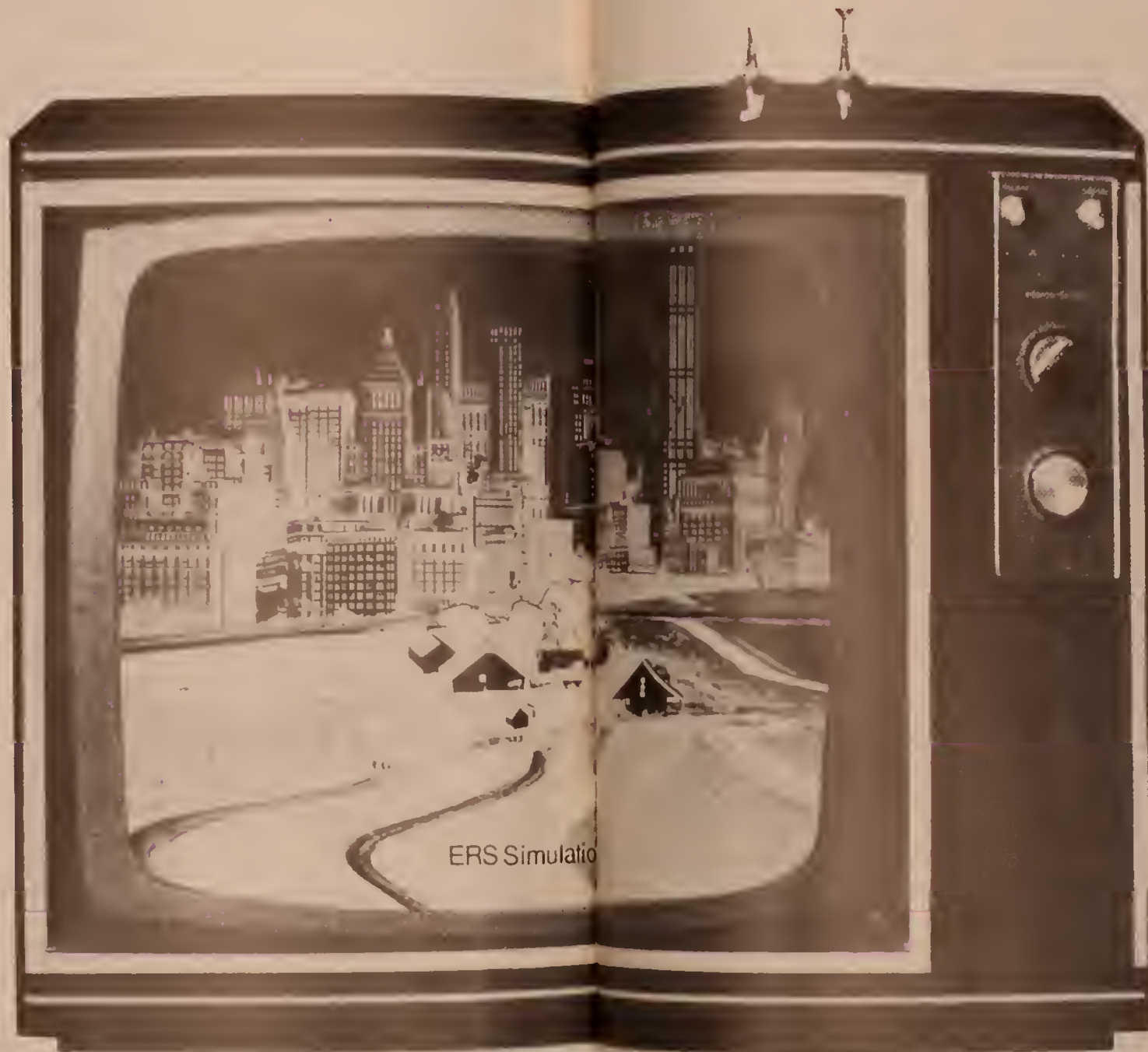
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SHALL THE TWO MEET IN 2000?



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the decline in the rate of rural labor force participation. Meantime, per capita incomes in urban America would jump well above trend projections, due to less competition for jobs and less unemployment there.

Higher worker productivity. The annual rate of increase in output and income per rural worker was simulated at 3.5 percent—compared with the 3.0 percent observed in the 1960-70 period. In urban areas, the rate was held at the observed 2.5 percent. Three findings emerged from the analysis: first,

aggregate income, population, and employment in rural America rose above trend. Second, rural outmigration tapered off before 30 years expired, and third, the rural-urban income gap began to close immediately.

Expansion of demand for nonfarm employment. During 1960-70, the urban economy was able to absorb idle workers at nearly twice the rate of the rural economy. When the capacity of the rural labor market is expanded to match that in urban areas, the gap in per capita income between the two sectors closes by the year 2000. In addition, the simulation reveals that rural work force participation rates climb, and business activity in 2000 jumps nearly 20 percent above trend projections.

The last two alternatives—creating nonfarm jobs and upgrading job productivity—seem to offer the most promise. But which of the two is more effective in rural development programs?

To get some answers, a target simulation was run to determine the relative importance of each in reaching specified employment, income, and population targets by the year 2000.

Employment targets were set for labor force participation rates in rural America to equal the current trend projection for the urban sector—417 workers per 1,000 population.

Targets for rural per capita incomes were also geared to match those seen for urban areas in 2000.

In both rural and urban areas, it was assumed that population would grow according to the projected trend.

The conclusion: To reach the targets for the year 2000 would require a virtual doubling of rural America's capacity to absorb idle workers. Little change would be needed from the 1960-70 trends in the rates of output per worker.

In other words, to raise rural employment rates and per capita income to the level of the cities, rural-oriented multi-county areas defined in the study would have to somehow develop about 8.8 million more jobs than are expected from current trends.

These new rural jobs can be put into two categories. The first group contains jobs that are likely to be created under 1960-70 trends. The question is whether they would be located in rural or urban areas. In this first category, about 3.7 million more jobs were located in rural areas than would be expected by projecting the 1960-70 trends. They were balanced by 3.7 million fewer jobs in the urban sector.

In the second category are jobs that were not in

prospect for either area according to projections of 1960-70 trends. Of the 8.8 million jobs above trend needed in rural areas by the year 2000, 5.1 million are in this category. They are needed to deal with rural problems of unemployment, underemployment, and hidden unemployment in order to reach the goal of balanced economic activity between the two sectors.

Put another way, 177,000 more new jobs above trend projections would be needed each year to reach population, income, and employment targets in the next 30 years. (13)

New Water Systems Thirst For Extensive Planning

In a town in Oklahoma, the city fathers turned on their water system fed by a newly built reservoir.

That's when they discovered the water wasn't safe to drink.

Residents became ill. But the costs of treating the water were beyond reach for this rural hamlet of a few thousand people. It was cheaper in the long run to build another reservoir.

That's one example of what the lack of advance planning can cost a community.

In Oklahoma as many as 400 rural communities need better water facilities. They are either without a water system or without an adequate system.

Speaking at a recent seminar in that State, an ERS economist gave some pointers on how communities should go about planning a new water system.

He advised his audience to plan the system so that it will be adequate for at least the time needed to pay off the loan. A new water system is a large fixed investment, and the period of repayment will probably be lengthy.

The adequacy of the system depends, in part, on assessing how much water will be needed. To do this will require an in-depth economic study in order to furnish esti-

mates of population and industrial growth during the expected life of the water system.

Currently, residential water use in rural areas is upwards of 50 gallons a day per person. A figure of 100 gallons per day might be used in long-range planning unless local data are available on per capita consumption.

Types of industry using the water also should be considered when estimating the community's needs. Agricultural processing, for instance, uses about one-third as much water as mining activities.

In planning a water supply, three basic factors should be considered: source of supply, treatment requirements, and the distribution system with respect to the number and density of users. Potential sources of supply include purchasing water (treated and untreated) from an existing system; wells; rivers or streams; surface storage; or some combination of these sources.

Water treatment costs, as the Oklahoma town found out, can offset what would otherwise be the least expensive water source. Well water of poor quality may be more expensive than good-quality surface water when treatment costs are included. Before making a final selection of a water source, the water should be thoroughly analyzed.

Generally speaking, the cheapest source is shallow wells, then rivers and streams. Surface storage is usually the most expensive if a dam has to be constructed. Deep-well water costs vary with the well's depth and diameter. (14)

Nonmetro Areas Set Pace For Job Gains in Pa.

As was true in the sixties nationally—with the exception of the Western U.S.—manufacturing employment grew faster in nonmetropolitan areas than in metropolitan areas in Pennsylvania.

Manufacturing employment expanded 13.7 percent in small communities with populations under

25,000 during 1960-66. This was a much faster growth rate than the 3.6 percent of urban areas with centers of 25,000 and over.

The small communities acquired 40 percent of the 77,913 new jobs in manufacturing between 1960-66.

Small centers in the western-metropolitan region of the State gained the most—17.3 percent, or 11,546 jobs. They were followed closely by centers in the central-nonmetropolitan region, with 17.2 percent. Centers in the eastern-metropolitan region had a growth rate of 7.4 percent.

The chief growth industries in small centers were metal and machinery industries—6,800 new jobs were in primary metals and 11,000 in machinery. (10)

Found: A Rural Area With Low Hospital Costs

Where incomes are low and populations are thinly spread, problems of providing good medical care often become difficult. That's typical of rural areas, but costs of medical care are lower in some rural areas than in others. A case in point: the regional hospital network in the Grand Traverse Region of northwestern Michigan.

ERS economists did a study of the impact of this region's medical system on the availability and distribution of hospital beds; on the costs of hospital services; and on the amount and quality of services received by rural residents.

Economists found that the Grand Traverse Region's ratio of hospital personnel to patients was about the same as for the Nation as a whole in 1967. Length of patient stay was also about the same. But the hospitals' cost per patient day averaged \$48.76—\$5.32 below the national average.

The lower cost partly reflects the relatively low wage scales for hospital employees in rural Michigan. Of greater significance, however, was that each of the region's seven hospitals was available to all patients in

the commuting area, thus avoiding duplication of certain services and equipment.

Through a multi-county cooperative system, hospitals are able to cut down on the number of spare beds kept in reserve for emergencies. The Grand Traverse Region's hospitals had a total of 611 beds in 1967. Had each of the hospitals operated independently, they might have needed 702 beds. (15)

Calif. Growers Advised To Irrigate With Caution

Crop producers in California's San Joaquin Valley Westside stand to sharply increase their harvested acreage with the development of a massive irrigation system to transport water from the Sacramento Valley.

The Westside project, a new economic study concludes, could also saddle growers with financial problems unless farmers carefully assess market conditions before planting large areas to trees, vines, and vegetables.

Water deliveries from the system began in 1968. By 1990 and the project's completion, it's anticipated that producers in 13 water districts will be getting their water from the Westside project. Total irrigated acreage in 1990 is estimated at 1.2 million acres—a 31-percent gain from the 1970 level.

With a dependable supply of aqueduct water, cultivation of vine and orchard crops will become feasible in areas where uncertainty of ground water supplies formerly ruled out such long term capital investments.

Water costs range from \$9 an acre foot in one district to \$46 per acre foot in another. The costs of elevating and transporting the water long distances—in some cases over 400 miles—are chargeable to the growers.

In the face of high water costs, producers will find that many field crops aren't profitable. Large water bills may well influence growers to

concentrate on production of specialty crops, such as tree fruits, nuts, and other crops for which the water cost is a relatively small share of crop value.

These specialty crops are expected to account for over 25 percent of the Westside's irrigated land by 1990, compared with 4 percent prior to the project. Acreage planted to trees and vines will likely be 20 to 25 times greater than at present, and vegetable acreage may increase 3 to 5 times.

Large-scale conversion to specialty crops poses this problem: the market for these items is relatively narrow and demand is not expected to increase as fast as output. With a sudden abundance of specialty crops, prices could drop sharply. In turn, growers would be hard pressed to pay the water costs.

A study of planting intentions in the 13 water districts indicates that paying for the water project is within the growers' capacity if prices for specialty crops remain at current levels. But if overproduction drives prices down by 5 to 10 percent, the producers' ability to pay would be reduced by 40 percent. (17)

Experience Counts In Recreation Game

Outdoor recreation is big business in Wisconsin. It's the third largest industry after manufacturing and agriculture. A 1966 study found nearly 6,000 recreation enterprises in the Badger State.

An easy industry to enter? To find out, the study team asked a related question of the people already well established in the recreation field: "What advantages do you have . . . over a person trying to get started?"

Operators of the recreation enterprises most frequently replied that experience was their chief advantage. However, nearly a third of the respondents gave "established name, reputation, and clientele." A newcomer, the study team concluded, would be at a definite disadvantage until he got a name for himself.

Desirable location was also often mentioned as being an advantage, particularly by operators who depended on unpolluted lakes and streams for their recreation enterprise. Water bodies of that nature are limited in Wisconsin as elsewhere. So is the potential for creating new lakes.

Other barriers to entry included: a lack of information about how to run a recreation business; difficulty in raising funds for such an investment; and to some extent, opposition by the local residents to having certain types of recreation enterprises in their areas. (19)

Crops Cut Wide Swath In Mississippi Woods

Unlike other areas of the U.S., the Southern Mississippi Alluvial Valley is experiencing rapid and extensive land clearing for crop use.

In 1969 as in 1950, cropland and forest together accounted for over four-fifths of the region's 24 million acres, taking in parts of Arkansas, Louisiana, Mississippi, Tennessee, and Kentucky.

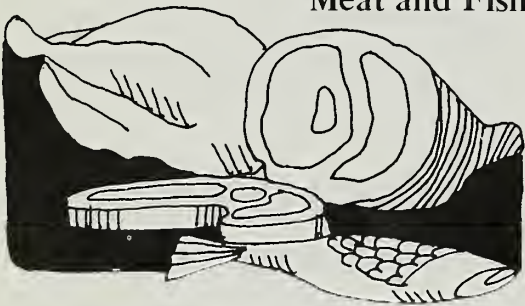
Since 1950, there's been a switch in the relative positions of the two main categories of land use. An ERS study found that forest had 48 percent of the total area in 1950, but only 31 percent by 1969.

Conversely, cropland's share went from 41 percent in 1950 to 51 percent 20 years later. Cropland in 1969 totaled 13.7 million acres—up 3.7 million. The area in forest that year was 7.5 million acres—down 4 million from 1950.

Land was cleared at particularly rapid rates along the western margin of the study border, and in scattered counties elsewhere. From 20 to 30 percent of the area of several additional counties and parishes was cleared. Generally these counties were adjacent to those experiencing very intensive clearing activity or near the eastern margin of the study area in Mississippi. Cropland and forest together account for at least 85 percent of the six-State area. (25)

The Life Story of GROCERIES

Meat and Fish



Meat is the leader in supermarket sales, and consumers spend about 24 cents out of their supermarket dollar on it.

However, the Rutgers study found a number of improvements could be made at the supermarket to insure customers of good quality:

- Packages be stamped with the date put on display to help consumers in home storage rotation.
- More explicit instructions on use and storage conditions be put on meat packages.

- A 5-year plan be initiated to lower temperatures in retail meat display cases to 28°F. This would substantially enhance shelf quality of fresh meat.

- Canned hams, packaged cold-cuts, and processed products in flexible laminated films and cans be stored at refrigeration temperature at all times.

- Fresh poultry and fish carry labels stating the product should be used within 1 day of purchase and show date put on display.

- All fish that is frozen and then sold as fresh be so labeled. For reasons of nutrition, flavor, color, and texture, customers should be advised not to refreeze thawed fish.

- Labels on ground beef should state that if it is frozen after purchase, it should be defrosted at refrigerator temperatures or under running cold water. It should not be defrosted at room temperature.

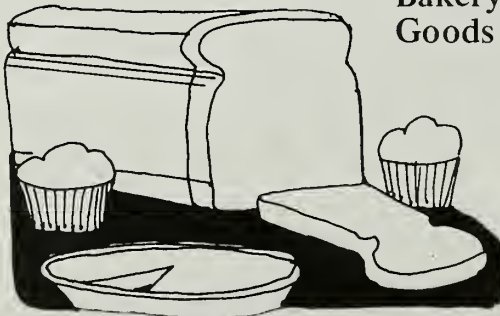
Usually the only problem with bakery supplies and products is that they may get stale.

There's one exception to this rule-of-thumb. That's bakery goods with fillings added after the pasteurizing factor of cooking. On these items, such as cream-filled pies and cakes, the Rutgers report urges sanitation and handling regulations be established to guard against bacterial growth.

The study further recommends:

- All such dairy and synthetic cream-filled eclairs, pies, and cakes be labeled "Refrigerate at all times and consume within 24 hours of purchase."

Bakery Goods



- Other types of pies be labeled "Refrigerate after opening."

- All bakery items carry the date put on display.

- Refrigerated dough show an expiration date because it eventually loses its leavening power and is normally stored at 40°F. or below.

*A Rutgers study singles out groceries and tells their life story—how they're cared for till they reach the supermarket, how long they'll last at home—and recommends some changes take place.**

Unloading the grocery bag, a shopper may make a mental note of how long he can safely keep the hamburger . . . how many days before the bread gets stale . . . how long he can store the milk.

But he has no assurance he's right. From one shopping trip to the next, he may find these times vary with such factors as the sanitary conditions and temperatures to which his groceries were exposed before he bought them, and the materials used in their processing and packaging. Potato chips, for instance, may become stale and rancid within 1 week in one type of wrapper and still be fresh in 4 weeks in another type.

A new Rutgers University study published by ERS delves into all major retail food categories to determine the length of time products retain quality and types of date labeling that would better assure the consumer of foods at their best.

Volume I of the Rutgers report recommends that food processors mark shipping cartons with the date of manufacture and that retailers mark the date of shelf display on all consumer packages.

Going back to that shopper's grocery bag, the report recommends:

—Ground beef packages should show date and time of wrapping; be sold within 24 hours of wrapping; and state on the package that it must be used or frozen within 24 hours of purchase.

—Bread should show the date of shelf display by means of a tag, color-coded tie, or label, and the code meaning should be made clear to the shopper.

—Milk cartons should be stamped

* The findings and recommendations of the survey are not necessarily endorsed by the Department of Agriculture.

by the retailer to show the day and the month the milk went on display to help the retailer in stock rotation and the consumer in home use.

The report recommends that neither an expiration date (the end of the product's freshness or usable life) nor a retail pull date (the last day the store may sell a product) be put on packages. This is because other factors—such as the temperature at which the item has been stored and sanitary conditions under which it was prepared and shipped—are more important in determining shelf life than age alone. Food industry spokesmen have said such dating would encumber the store's rotating procedure—shoppers would seek out those items with the latest date and other perfectly acceptable products would accumulate. An expiration date could also give a shopper a false sense of security if the product had not been handled properly.

In general, the study found that health hazards from prepackaged processed foods are few. Most food quality loss is aesthetic.

Canning—whether at home or commercially—was still rated an excellent way to preserve food. Most canned foods are sterilized by heat so that they can be shipped and stored without refrigeration. The length of time canned goods are good, though, can be shortened if they are stored at high temperatures. The report recommends storage at less than 80° F. and preferably, less than 72° F. One industry source recommended that canned goods be kept no longer than a year in the home, and the study endorsed that recommendation.

Baby food was singled out for close scrutiny because of the suggested widespread concern by the public. The study team found the food industry used good quality control measures—both in testing the foods and in monitoring them in the stores. It was suggested, however, that the date of shelf display be put on the products to aid consumers and store clerks in stock rotation and that all canned *formulated* baby foods be expiry dated. (20)

Milk and milk products may be potential health hazards and disease carriers unless careful sanitary processing methods are used.

Bacterial growth and souring are usually responsible for the end of the shelf life of milk products.

The report recommends that:

- All milk and dairy products bear the date put on display to help both the store clerk in stock rotation and the consumer at home.

- Pasteurized milk be stored at no higher than 45° F. in the distributor's transportation equipment and in retail outlets.

Ice cream, to retain top quality, be kept at a temperature of -10° F. and never above 0° F., even if it is difficult to scoop when hard. Disease-bearing organisms don't grow at temperatures below 32° F., but deterioration will occur in loss of

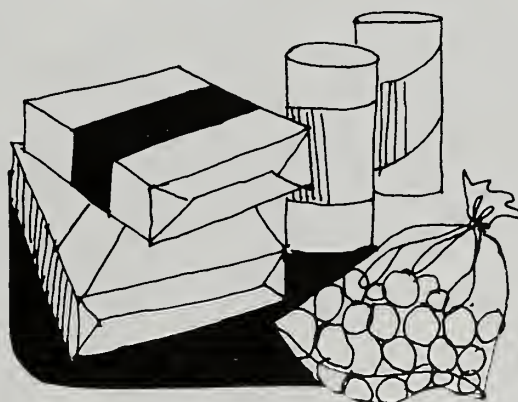
Milk and Dairy Products



texture and cause crystallization.

The study also points out that putting a date of processing on milk containers will not assure the customer of quality. Milk processed under borderline sanitary conditions may be "fresher" but not up to the quality of older milk prepared under higher standards. The Milk Industry Foundation in a report quoted in the study stated that properly pasteurized milk may show no increase in bacterial levels for at least 20 days if the temperature is maintained at 40° F. or below.

Frozen Foods



A lot of frozen foods could last for years if they've been prepared under good sanitary standards and stored below zero.

However, if they're not properly handled, they can deteriorate rapidly. Natural warnings of loss of color and flavor are apparent, though, when the foods begin to deteriorate.

The frozen food department is one in which the Rutgers report, commissioned by the Health Department of the State of New Jersey, recommends a number of changes.

- Future supermarket layouts

should be such that the shopper can easily pick up frozen foods as the last item on the list.

- Bags, similar to those for ice cream, should be provided close to the frozen food display. Thus, the shopper can protect foods from quality losses due to temperature increases as the food goes from store to home.

- The package should be plainly marked with the date put on display to help the buyer rotate the foods at home.

- Warnings such as bells or alarms should be put on all warehouses and transportation equipment and retail cabinets to signify if temperatures reach above zero.

- Replacement cabinets in stores should be vertical with doors and fitted air curtains to reduce mishandling by retailers and consumers. Temperature recommended is zero, or preferably, -5° F.

- Present open-top freezer cabinets should have plastic, rolltop covers for overnight temperature control. Air-curtain types may be exempted.

El Salvador



Faced with a rapidly expanding population and limited farming area, this small country seeks in its agricultural policy to increase food and crop production through improved farming practices.

What is agriculture like in the smallest country on the American mainland?

Along the coastline are cotton, sugarcane, and coconuts. Along the plateaus are farms that supply crops

for domestic use. And in the rugged uplands are the coffee trees that produce its most famous product.

The country is El Salvador, and despite its smallness—slightly larger than New Jersey—it is sixth among all Nations in the amount of coffee it exports—nearly 2 million bags in 1970.

El Salvador is unique among most Latin American countries in that it uses just about all of its land. Three-fourths of it is in agriculture. To meet the needs of the fast-expanding

population, government and outside technical assistance are aimed at improving farm practices for higher yields. An example: mass fertilizer use demonstrations for corn given in 1965 under U. S. AID sponsorship resulted in sharply increased production and lower prices for consumers.

The government's general agricultural policies are (1) to expand production of basic food crops to feed the rapidly growing population and (2) to improve living conditions for the thousands of small farmers

whose farms are less than 1 hectare in size (1 hectare = 2.5 acres). Nearly half of the country's 227,000 farms in 1961 (latest available data) were in this category.

El Salvador's biggest problem is its large and growing population. With an estimated 3.3 million people, it is the most densely populated country on the entire mainland of America, and its growth rate has been steady at 3.4 percent annually. In the past, Salvadoreans eased population pressure by migrating to neighboring countries, particularly Honduras. But migration ended in 1969 after armed conflict with Honduras.

Unemployment and underemployment are high because the population is increasing faster than new jobs. Unemployment ranges between 5 and 20 percent, with peak employment during the harvest season from November through February.

Three crops—grown chiefly for export—dominate the country's agriculture: coffee, cotton, and sugar. In 1961 nearly 36,000 (16 percent) of the country's 227,000 farms produced coffee. The larger farms (20 to 2,500 hectares) represent 10 percent of all coffee farms and produce more than 80 percent of the crop. The large farms on the best land are passed down from one generation to another.

Coffee is grown in the rugged uplands and is dependent on hand labor because of the terrain. The coffee industry is the largest employer in El Salvador, with some 300,000 persons—about 30 percent of the labor force. At harvest time, that figure doubles. In all, agriculture accounts for about 60 percent of the labor force.

Cotton is grown in the fertile coastal plains and river valleys with

the aid of modern farming techniques. Yields compare favorably with neighboring countries and exceed the average in the United States.

Sugarcane is milled and exported, principally to the United States, but domestic use of sugar is on the rise with the population increase, higher living standards, and increased use by processed food and beverage industries.

From Tree to Grounds

The average American has about 12 coffee trees working for him somewhere in the world.

Major consumers of coffee, Americans down about 40 percent of the world supply at an average rate of 2½ cups a day per person. The major producing countries are in Latin America and Africa.

The trees—actually they're evergreen shrubs—come into commercial production when they're from 3 to 5 years old. Although they'd grow up to 20 feet tall, they're usually pruned to produce higher yields and facilitate harvesting.

The flower of the tree is much like the delicate and fragrant orange blossom. The fruit usually ripens from 7 to 9 months after flowering. From a light green color, the fruit gradually ripens to a deep red. Inside are two coffee beans.

The fruit is usually hand-picked. In Brazil, however, it is allowed to ripen and fall to the ground before harvesting.

There are two principal ways of processing the harvested fruit, the so-called "wet" method where the outer pulp is removed and the beans fermented and then washed and dried and the "dry" where the fruit is simply dried and then hulled.

From there, the beans are roasted to their typical brown color and aroma. All that's left is grinding . . . and perking. (26)

Corn, beans, rice, and sorghum are the basic ingredients in the diets of most Salvadoreans. The combined value of these crops is second only to that of coffee.

The average Salvadorean's daily food consumption was estimated at 1,840 calories in 1966, and was well below that of the rest of the Central Americans. The usual minimum standard for that part of the world is 2,450 calories.

The many workers who do not own land farm as squatters or under arrangements with the landowner. Many also are migrant farm workers. They usually produce enough basic food for their families.

The country, through agrarian reform, seeks more equitable distribution of the land by subdividing large estates and by parcelling out public and idle land to landless rural people. In 1962, the Rural Colonization Institute, which implements the program, divided more than 30,000 hectares among nearly 6,000 families.

A supervised credit program was initiated by the government in 1961 to help small farmers who could not otherwise obtain credit. From 1962 through late 1969, over 31,000 loans were made, with a total value of \$16.5 million. In 1965, a sampling of 10 percent of the borrowers showed their total gross value of agricultural products had increased 96 percent since the start of the credit program. Average size of farm unit increased by nearly a fourth, and income per unit by one half.

In foreign trade, El Salvador's exports total more than \$200 million annually, and the value of its imports is about the same. Agricultural products account for about two-thirds of the total export value and 15-18 percent of the total import value.

Germany is the leading market for El Salvador's coffee, importing \$40.8 million worth in 1968 compared with \$25.7 million imported by the United States. Japan is El Salvador's best market for cotton, and takes about 90 percent of the crop. The U.S. is its major market for sugar.

The U.S. also imports soluble coffee, sesame seed, cotton linters and crude animal and vegetable products. Its chief exports to El Salvador are dairy products, wheat, animal feed, soybeans, animal and vegetable fats and oils, and miscellaneous food preparations. Value of exports has increased from a \$6.4 million average for 1960-64 to \$11.5 in 1970.

El Salvador imports most of its wheat from the U.S.—\$3.3 million out of a total of \$3.4 million in 1968. With the rising standard of living, local consumption of wheat is expected to continue to increase.

El Salvador has been one of the chief promoters of the Central American Common Market (CACM) and has been a leader in imports and exports within the CACM. (21)

German Food Stores: The Space Savers

In one respect, the supermarkets of West Germany are like cathedrals . . . they're built to last for centuries. The analogy ends there, for German chain stores are generally cramped places to visit. They average about 5,700 square feet of floor space, or some 3,800 fewer than U.S. supermarkets.

Main reasons are that Germany's higher construction costs (roughly double those of the U.S.) encourage economy in use of store space, and lower wages encourage greater use of labor.

Both the German and American food chains have about the same gross operating margins—around 20-22 percent of gross sales. American chains get far higher productivity (sales) per worker, but German chains use their costly space so as to get far higher sales per square foot.

U.S. stores also give more customer services, including attractive surroundings in which to shop, and a

wider assortment of merchandise. In Germany, the stores have narrow aisles and feature relatively few units of products on the shelves. Such store practices impede customer movement through the stores and raise costs to stock shelves. (22)

Cotton Losing Favor With Brazilian Farmers

Cotton, a major cash crop in Brazil, is losing its luster among farmers in that country. Low yields, rising production costs, and adverse weather are diverting producers' interest to alternative crops such as soybeans, peanuts, and corn.

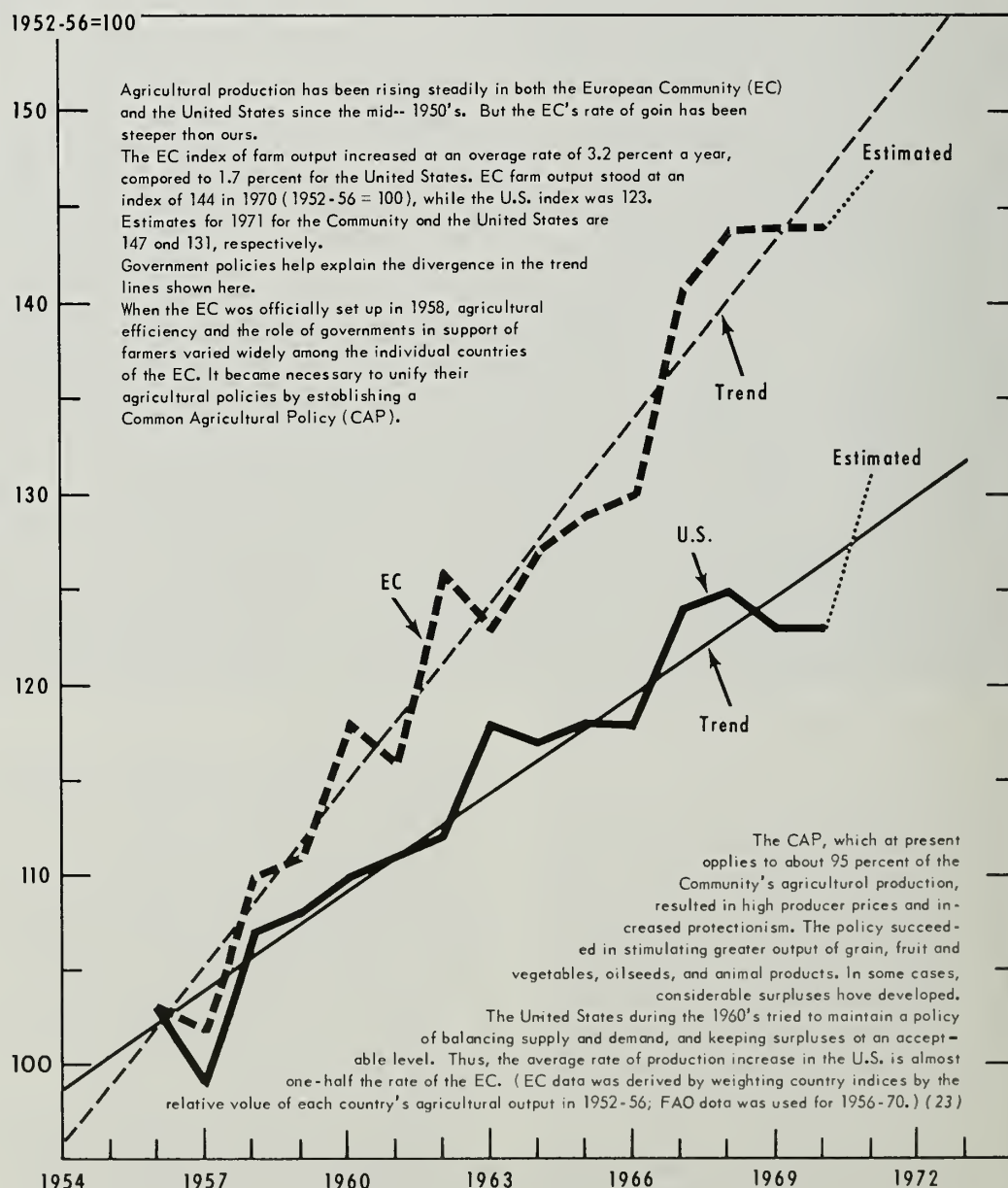
Weatherwise, Brazil's cotton crop

in the Northeast suffered severe drought damage in 1970. In the South, growers got too much rain in 1970, and too little this year during the growing season.

Total production in 1971, at 535,000 metric tons (lint basis), was off only 8 percent from 1970. But this confirms for a second year in a row the farmers' disenchantment with cotton, according to a recent report.

Brazil's cotton exports, largest in South America, reached a record 439,000 tons in 1969 and posed a competitive threat to U.S. exports. They dropped to 343,000 tons in 1970, and will drop even further in 1971. (24)

AGRICULTURAL OUTPUT DIVERGES IN THE U.S. AND EC



Recent Publications

OPEN-COUNTRY IN A RELATIVELY AFFLUENT AREA: THE EAST NORTH CENTRAL STATES. Jeannette Fitzwilliams, Economic Development Division. AER 208.

Incidence of poverty was found to be greatest among the aged, disabled, and small farmers of all ages who relied on farming as a major source of income.

AGRICULTURAL FINANCE REVIEW. John E. Lee, Jr., Farm Production Economics Division. Vol. 32, August 1971.

This annual publication includes six by-line articles, in addition to agricultural finance highlights of the year and a book review section. Articles report on concepts and research in a broad range of agricultural finance issues as they relate to farm spending and management programs.

MICRONAIRE BLENDING OF MEDIUM-STAPLE COTTONS—AN ECONOMIC EVALUATION. Preston E. LaFerney and Henry H. Perkins, Jr., Marketing Economics Division. MRR 935.

This report compares the performance of blended Micronaire mixes of cotton with that of natural blends of the same average reading to determine the economic feasibility of using cottons "discounted" in price for high or low Micronaire readings.

COSTS AND RETURNS: NORTHWEST CATTLE RANCHES, 1970. Wylie D. Goodsell and Macie J. Belfield, Farm Production Economics Division. FCR 80.

This report is part of a nationwide study of costs and returns on 12 types of commercial farms and ranches in selected farming regions.

THE EFFECTS OF VARIOUS WAGE RATES ON FARM ORGANIZATION AND STRUCTURE IN SOUTHWEST VIRGINIA. Farm Production Economics Division, in cooperation with Virginia Polytechnic Institute and State University, Blacksburg, Vir-

The publications listed here are issued by the Economic Research Service and cooperatively by the State universities and colleges. Unless otherwise noted, reports listed here and under Sources are published by ERS. Single copies are available free from The Farm Index, OMS, U.S. Department of Agriculture, Washington, D.C. 20250. State publications (descriptions below include name of experiment station or university after title) may be obtained only by writing to the issuing agencies of the respective States.

Minitips for the Consumer

Looking for advice or helpful tips on selecting a house, managing money, or growing a minigarden? The new *Consumer Product Information Index* is a good place to start.

The *Index* lists recent government publications on buying, using, and taking care of a host of consumer products. Contents of the catalog are divided into several broad categories, including appliances, automobiles, budgeting, child care, food, health, housing, and landscaping.

Over 150 publications are summarized. Many are free, and the others carry a nominal charge.

Individual publications cover such diverse topics as selection of lawn seed, safety considerations in buying and using children's toys, and ways the consumer can protect himself against mail fraud.

The catalog was prepared through the joint efforts of the Office of Consumer Affairs and the Consumer Product Information Coordinating Center. The Center was recently established at President Nixon's request as part of a continuing program to develop and share more product information with the American consumer.

For a free copy of the *Consumer Product Information Index*, write the Editor, The Farm Index, OMS, Room 1459, U.S. Department of Agriculture, Washington, D.C. 20250

ginia. RDB 63.

This study was conducted to provide guidelines for farmers using alternative production methods—especially those affected by changes in prices and technology—and for those persons engaged in developing and administering public agricultural programs.

RURAL HOMEOWNERS' USE OF HOME MORTGAGE CREDIT IN THE OZARK REGION, 1966. Hugh H. Spurlock, Economic Development Division, in cooperation with Arkansas Agricultural Experiment Station, University of Arkansas. AER 211.

This study indicates rural home buyers have limited access to long term, low-equity, amortized loans. Most loans were made by local banks, individuals, and a wide assortment of minor lenders.

OUTDOOR RECREATION IN NORTH-CENTRAL NEW MEXICO, 1967. Robert O. Coppedge, J'Wayne McArthur, and William R. Summitt, New Mexico Resource Conservation Project, cooperating with Natural Resource Economics Division. ERS 483.

This report provides data about recreation and recreational resource use for north-central New Mexico. It includes the tributary watersheds of the Rio Grande from the New Mexico-Colorado border to about 25 miles north of Albuquerque.

OCEAN FREIGHT RATE INDEXES FOR HEAVY GRAINS 1961-69. T. Q. Hutchinson and Ruth Morrison, Marketing Economics Division. ERS 476.

This report presents indexes reflecting rates charged by voyage-chartered ships carrying heavy grain cargoes. All indexes showed substantial annual fluctuations in 1961-69. Since 1965, the composite index has shown a declining trend.

THE 1971 AGRICULTURAL DATA BOOK: FOR THE FAR EAST AND OCEANIA, Foreign Regional Analysis Division. ERS-For. 267 (Revised September 1971).

This is the fifth annual *Agricultural Data Book* for the Far East and Oceania. Published in conjunction with *The Far East and Oceania Agricultural Situation*, it provides current and historical data on production and trade of agricultural products by the countries in those areas.

FOREIGN GOLD AND EXCHANGE RESERVES: CURRENT TRENDS. Carolee Santmyer, Amalia Vellianitis, and O. Halbert Goolsby, Foreign Development and Trade Division. FGER 10.

Total free world reserves expanded by an estimated 18 percent to over \$91.8 billion by the close of 1970. World exports, at \$278 billion, were up 14.2 percent, and imports, at \$288 billion, rose 12.7 percent.

Average world prices for the exports of less developed nations advanced less than 3 percent, while prices of developed country exports rose roughly 5 percent.

HIGHWAY IMPACTS ON INCOMES AND EMPLOYMENT IN THE OZARKS. John A. Kuehn, Economic Development Division, and Jerry G. West, University of Missouri. ERS-488.

Results of the study indicate that highways were not among the most critical factors in the Ozarks Region's development. If highways are built, those that would best serve the area's interests are two-lane paved, State-numbered roads to link existing National routes, and paved county roads to connect outlying rural areas with urban centers.

SELECTED U.S. CROP BUDGETS: YIELDS, INPUTS, AND VARIABLE COSTS. VOL. IV, NORTHWEST REGION. LeRoy C. Rude, Farm Production Economics Division. ERS 460.

This report is one of a set presenting estimates of variable costs of producing major crops in the Northwest, Southeast, North Central, Great Plains, South Central, and Southwest regions of the U.S.

A SUPPLEMENT TO THE JULY 1971 FARM INCOME SITUATION: FARM INCOME STATE ESTIMATES 1949-1970. Economic and Statistical Analysis Division. FIS 218 Supplement/August 1971.

The detailed State estimates in this report supplement the U.S. and State data published in the July 1971 *Farm Income Situation*, FIS-218.

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NOTE: Unless otherwise indicated, authors are on the staff of the Economic Research Service (ERS) with their divisions designated as follows: Economic and Statistical Analysis Division (ESAD); Economic Development Division (EDD); Farm Production Economics Division (FPED); Foreign Development and Trade Division (FDTD); Foreign Regional Analysis Division (FRAD); Marketing Economic Division (MED); and Natural Resource Economics Division (NRED).

Economic Trends

Item	Unit or Base Period	1967	Year	1970 Aug.	June	1971 July	Aug.
Prices:							
Prices received by farmers	1967=100	—	110	109	113	113	113
Crops	1967=100	—	100	100	114	111	108
Livestock and products	1967=100	—	118	115	113	114	117
Prices paid, interest, taxes and wage rates	1967=100	—	114	114	120	120	120
Family living items	1967=100	—	114	114	119	119	120
Production items	1967=100	—	110	109	116	116	116
Ratio ¹	1967=100	—	96	96	94	94	95
Wholesale prices, all commodities	1967=100	—	110.4	110.5	114.3	114.6	114.9
Industrial commodities	1967=100	—	110.0	110.2	113.9	114.5	115.1
Farm products	1967=100	—	111.0	108.5	116.0	113.4	113.2
Processed foods and feeds	1967=100	—	112.0	112.9	114.9	116.0	115.4
Consumer price index, all items	1967=100	—	116.3	116.9	121.5	121.8	122.2
Food	1967=100	—	114.9	115.9	119.2	119.8	120.0
Farm Food Market Basket: ²							
Retail cost	Dollars	1,080	1,225	1,235	1,254	1,263	1,264
Farm value	Dollars	414	480	477	479	484	485
Farm-retail spread	Dollars	666	745	758	775	779	779
Farmers' share of retail cost	Percent	38	39	39	38	38	38
Farm Income: ³							
Volume of farm marketings	1967	100	104	99	91	101	106
Cash receipts from farm marketings	Million dollars	42,693	49,231	3,901	3,702	3,986	4,200
Crops	Million dollars	18,434	19,636	1,486	1,226	1,609	1,700
Livestock and products	Million dollars	24,259	29,595	2,415	2,476	2,377	2,500
Realized gross income ⁴	Billion dollars	49.0	56.6	—	57.6	—	—
Farm production expenses ⁴	Billion dollars	34.8	40.9	—	42.8	—	—
Realized net income ⁴	Billion dollars	14.2	15.7	—	14.8	—	—
Agricultural Trade:							
Agricultural exports	Million dollars	—	7,174	531	607	579	546
Agricultural imports	Million dollars	—	5,667	464	530	489	555
Land Values:							
Average value per acre	1967 = 100	—	⁶ 118	⁷ 117	—	—	⁸ 121
Total value of farm real estate	Billion dollars	—	⁶ 210.7	⁷ 208.9	—	—	⁸ 214.0
Gross National Product: ⁴							
	Billion dollars	793.9	974.1	—	1,043.1	—	—
Consumption	Billion dollars	492.1	615.8	—	660.9	—	—
Investment	Billion dollars	116.6	135.3	—	152.4	—	—
Government expenditures	Billion dollars	180.1	219.4	—	230.2	—	—
Net exports	Billion dollars	5.2	3.6	—	5.0	—	—
Income and Spending: ⁵							
Personal income, annual rate	Billion dollars	629.3	803.6	809.0	870.1	859.2	868.0
Total retail sales, monthly rate	Million dollars	26,151	30,381	30,781	33,310	33,029	—
Retail sales of food group, monthly rate	Million dollars	5,759	6,789	6,814	7,121	7,167	—
Employment and Wages: ⁵							
Total civilian employment	Millions	74.4	78.6	78.5	78.4	78.9	79.2
Agricultural	Millions	3.8	3.5	3.4	3.3	3.4	3.4
Rate of unemployment	Percent	3.8	4.9	5.1	5.6	5.8	6.1
Workweek in manufacturing	Hours	40.6	39.8	39.8	40.0	40.0	39.9
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	3.36	3.37	3.57	3.57	3.57
Industrial Production: ⁵							
	1967 = 100	—	107	108	107	106	105
Manufacturers' Shipments and Inventories: ⁵							
Total shipments, monthly rate	Million dollars	46,458	54,429	55,644	58,988	58,156	—
Total inventories, book value end of month	Million dollars	84,563	100,476	99,329	100,536	100,358	—
Total new orders, monthly rate	Million dollars	46,707	53,866	54,932	57,009	57,977	—

¹ Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. ² Average annual quantities of farm food products purchased by urban wage-earner and clerical worker households (including those of single workers living alone) in 1959-61—estimated monthly. ³ Annual and quarterly data are on 50-State basis. ⁴ Annual rates seasonally adjusted second quarter. ⁵ Seasonally adjusted. ⁶ As of November 1, 1970. ⁷ As of March 1, 1970

⁸ As of March 1, 1971.

Sources: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Advance Retail Sales Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale Price Index).

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